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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,085	08/27/2001	Takenobu Sunagawa	011080	2186

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EXAMINER	
ZALUKAEVA, TATYANA	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 05/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/926,085	SUNAGAWA ET AL.	
	Examiner	Art Unit	
	Tatyana Zalukaeva	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9 and 11* is/are pending in the application.

4a) Of the above claim(s) *4,5,7 and 8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,6,9 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1,3-9 and 11* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim interpretation

1. Applicants amende claim 1 to recite specific vinyl monomer copolymerizable with two opther acrylate comonomers, however, the range of such monomer is fro 0%, which makes the presence of such monomer optional. Furthermore two other monomers are allowed to present in the amounts that sum up to 100%.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3, 6 stand rejected under 35 U.S.C. 102(b) as being anticipated by Orikasa et al (U.S. 5,218,037), as per reasons of record.

Orikasa discloses a processing aid for thermoplastic resin composition (abstract) comprising ethylene-glycidyl methacrylate-methyl methacrylate random polymer prepared by radical polymerization (see Fig.2, and col.3, lines 35-40). The preferable copolymer comprises ***60 to 99.5% by weight of ethylene***, (another vinyl monomer of the instant claims 1 and 9) ***0.5 to 40% by weight of the glycidyl group-containing monomer*** (methacrylate having an oxygen atom in addition to ester bond of the instant claims 1, 6 and 9) and ***0 to 39.5% by weight of another unsaturated monomer*** (another alkyl acrylate of the instant claims 1 and 9). (see col.6, lines 15-25 and Fig.2). Ethylene-ethyl acrylate - glycidyl methacrylate copolymer is preferable

copolymer (col. 6, lines 59-63). Orikasa further teaches that the epoxy group-containing olefin copolymer may be prepared by simultaneously ***or stepwise*** (reads on multistep process of the instant claim 1) contacting and emulsion polymerizing a monomer mixture of 60 to 99.5% by weight of the above-mentioned ethylene, 0.5 to 40% by weight of one or more unsaturated glycidyl group-containing monomer, and 0 to 39.5% by weight of at least one other unsaturated monomer in the presence of ***0.0001 to 1% by weight of a radical polymerization initiator*** based on the total weight of all the monomers (col.7, lines 1-10). Polymerization initiators are listed as general formulas in col. 9, lines 35-45 and as species naming those having tertiary –butyl peroxy group in col.10, lines 45-50. See also Example 1 and reference example 1.

The same procedure as in Preparation Example 1 was repeated with the exception that 300 g of styrene as a vinyl monomer was replaced with ***300 g of a methyl methacrylate*** monomer and 0.6 g of ***n-dodecylmercaptan as a molecular weight modifier*** (chain transfer agent of the instant claim 9) was used, thereby preparing multi-phase structure thermoplastic resin IIIb via a graft polymerization precursor IIIb' (number average polymerization degree of methyl methacrylate polymer=700).

The degree of polymerization of methyl methacrylate is 700 in a specific example, which brings the molecular weight to 70,000, which is a value within the claimed range. This expressly reads on the limitations of the instant claims 1, 3 and 6 with regard to the product as claimed as well as to the process by which it is made.

4. Claims 1,3,6, stand rejected is under 35 U.S.C. 102(b) as being anticipated by or in the alternative as unpatentable over Kato et al (U.S. 3,875,255).

Kato discloses a two-step polymerization (Example 1) which can be suspension or emulsion (col.5, lines 39-50), wherein glycidyl methacrylate (0.2 parts) copolymerized with 13 parts of butyl acrylate and ethylene in the presence of 0.005 parts of di-tert butyl peroxide and dodecyl mercaptan as chain transfer agent. (see Example 1). Mercaptan chain transfer agents are listed in col.5, lines 17-22. The polymerization in examples of Kato is a multistep polymerization. (lines 55-67 of col.6). The molecular weight of the copolymer inherently flows form the identity of the polymers and substantial similarity of the process by which the polymer has been made. In addition the intrinsic viscosity of the copolymer of ethylene-butyl methacrylate and glycidyl methacrylate of 1.06 9as taught by Kato) indirectly points out to the molecular weight that is within the claimed range. With regard to the molecular weight of the resin, the rejection is made in the sense of ***In re Fitzgerald*** (205 USPQ 594). (CAFC)

It is the base presumption that the properties governing the claimed if not taught, may be very well met by the copolymers of Kato, since the copolymers of Kato are essentially the same and made in essentially the same manner as applicants' polymer.

5. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato or Orikasa, each one individually in view of Robinson (U.S. 5,874,495).

Kato and Orikasa disclose mercaptans, as chain transfer agents, however do not disclose mercpatans having ester group, as per instant claims 9 and 11.

Robinson recognizes different chaintransfer agents, among them those of Orikasa and kato along with the instantly claimed thioglycolates: "Representative chain transfer agents are carbon tetrachloride, bromoform, bromotrichloromethane, long chain alkyl mercaptans and thioesters such as n-dodecyl mercaptan, t-dodecyl mercaptan, octyl mercaptan, tetradecyl mercaptan, hexadecyl mercaptan, butyl thioglycolate, isooctyl thioglycolate, and dodecyl thioglycolate" (col.5, lines 8-17). In the instant case substitution of equivalents requires no express motivation, as long as the prior art recognizes equivalency, ***In re Fount*** 213 USPQ 532 (CCPA 1982); ***In re Siebentritt*** 152 USPQ 618 (CCPA 1967); ***Graver Tank & Mfg. Co. Inc. V. Linde Air products Co***. 85 USPQ 328 (USSC 1950). And those skilled in the art would have found obvious to utilize thioglycolates of Robinson in lieu of mercapatnes of Orikasa and/or Kato based on their recognized equivalency and would thus arrived at the instant claims.

Response to Arguments

6. Applicant's arguments filed 02/22/2005 have been fully considered but they are not persuasive. The crux of Applicants' arguments appears to hinge on the process of making polymers., which is according to Applicants different in the cited references. In response to this, it is noted that the product, not the process is claimed, and that the patentability of the product is defined by the product per se, not by the process of its making. Applicants arguments that the claimed polymer has a core-shell structure are more specific than the claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. Arguments about claim 9 are persuasive, and the rejection of claim 9 is changed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (571) 272-1115. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1305. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tatyana Zalukaeva
Primary Examiner
Art Unit 1713

May 19, 2005